REMARKS

Reconsideration and allowance of this application are respectfully requested. Claims 1-17 are pending in the present application. Claims 1-5, 15 and 16 are withdrawn from consideration. Claims 6-14 and 17 are rejected. Applicant respectfully submits that the pending claims define patentable subject matter.

1. Overview of Final Office Action

Claims 6, 12, 13 and 17 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Shimada et al. (US 6,378,996; hereafter "Shimada") in view of Joo et al. (US 6,268,258; hereafter "Joo").

Claim 14 is rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Shimada in view of Joo, and further in view of Shimada et al. (US 5,802,686; hereafter "Shimada-1").

Claim 7-11 is rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Shimada.

2. Prior Art Rejection

In the Final Office Action, the Examiner states that "...forming an insulation film as read as dielectric comprising zirconium oxide (55)..." on page 2 and "... Joo et al teaches the annealing the insulation film ... in thermal oxidation of the zirconium layer (col. 2, lines 4-17)..." on page 3.

However, the dielectric film or layer disclosed in Joo is completely different from the insulation film disclosed in claim 6 (even claim 1 of the Shimada reference cited by the

Examiner) both in the structural aspect and in the functional aspect.

Joo describes in col. 2, lines 6-8 that "… the [a semiconductor-based] capacitor having a lower electrode, a dielectric film formed on a surface of the lower electrode, and an upper electrode formed on the dielectric film…" In contrast, claim 6 of the present application recites that the piezoelectric element comprising a lower electrode, a piezoelectric layer, and an upper electrode …" From FIG. 2B of the present application and FIG. 6G of Joo, it is obvious that the semiconductor-based capacitor of Joo may only correspond to the piezoelectric element described in claim 6 of the present application, and that the dielectric film of Joo may only be alleged to correspond to the piezoelectric layer described in claim 6. Further, claim 6 includes the operation of subjecting "the zirconium layer" included in the insulation film separately from the operation of forming the "piezoelectric layer" (corresponding to the dielectric film in Joo) included in the operation of forming the piezoelectric element.

However, as described above, based on the mistaken idea that the dielectric film in Joo corresponds to the insulation film of claim 6 (even claim 1 of Shimada), the Examiner seems to mistakenly determine that the operation of annealing the dielectric film in Joo corresponds to the operation of annealing the insulation film disclosed in claim 6.

In the meantime, since Joo teaches annealing only the dielectric film which is interposed between the upper and lower electrodes (FIG. 6G) and has a similar material as that of a piezoelectric layer of an actuator device disclosed in Shimada, and Shimada allegedly teaches a similar method of manufacturing the actuator device comprising a piezoelectric layer formed of a similar material as that of the dielectric film also interposed between the upper and lower electrodes, one skilled in the art having both references at hand would have been suggested or

taught to anneal only the piezoelectric layer but not the insulating film. This is because only the piezoelectric layer in the claim has a same structure as the dielectric film and may also serve insulating the upper and lower electrodes of the piezoelectric element as the dielectric film does. Thus, if one skilled in the art anneal the piezoelectric layer (not the insulating film) according to the teaching of Joo, the actuator device or ink jet head having the piezoelectric layer will only change the principle of operation of the actuator device of ink jet head, in which case the *prima facie* obviousness cannot be established.

As discussed above, the Joo reference only discloses a semiconductor-based capacitor including a dielectric film allegedly used as an insulation film between the upper and lower electrodes, while the claimed method is directed to an actuator device including an "insulation film" disposed below the upper and lower electrodes. Further, the dielectric film of Joo may only correspond to the piezoelectric layer of the claimed method in a structural aspect. Thus, one skilled in the art would not have been taught, suggested or motivated to combine the two references at least because: (i) the Joo reference is directed to a completely different device compared to that of the Shimada reference and the claimed method; and (ii) the dielectric film of Joo is distinguished from the insulation film of the claimed method in structural/functional aspects.

In view of the above, Applicant respectfully submits that the claimed method would not have been obvious over Shimada in view of Joo.

Claims 7-14 and 17 should be allowable at least due to their dependencies and additionally recited elements therein.

4. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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